



Behavioral changes for the climate transition: Psychological barriers and levers



Prof. Tobias Brosch

Consumer Decision and Sustainable Behavior Lab
Department of Psychology and Swiss Center for Affective Sciences
University of Geneva

The Rodney & Otamatea Times

WAITEMATA & KAIPARA GAZETTE.

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WARKWORTH, WEDNESDAY, AUGUST 14, 1912.

3d per Copy.

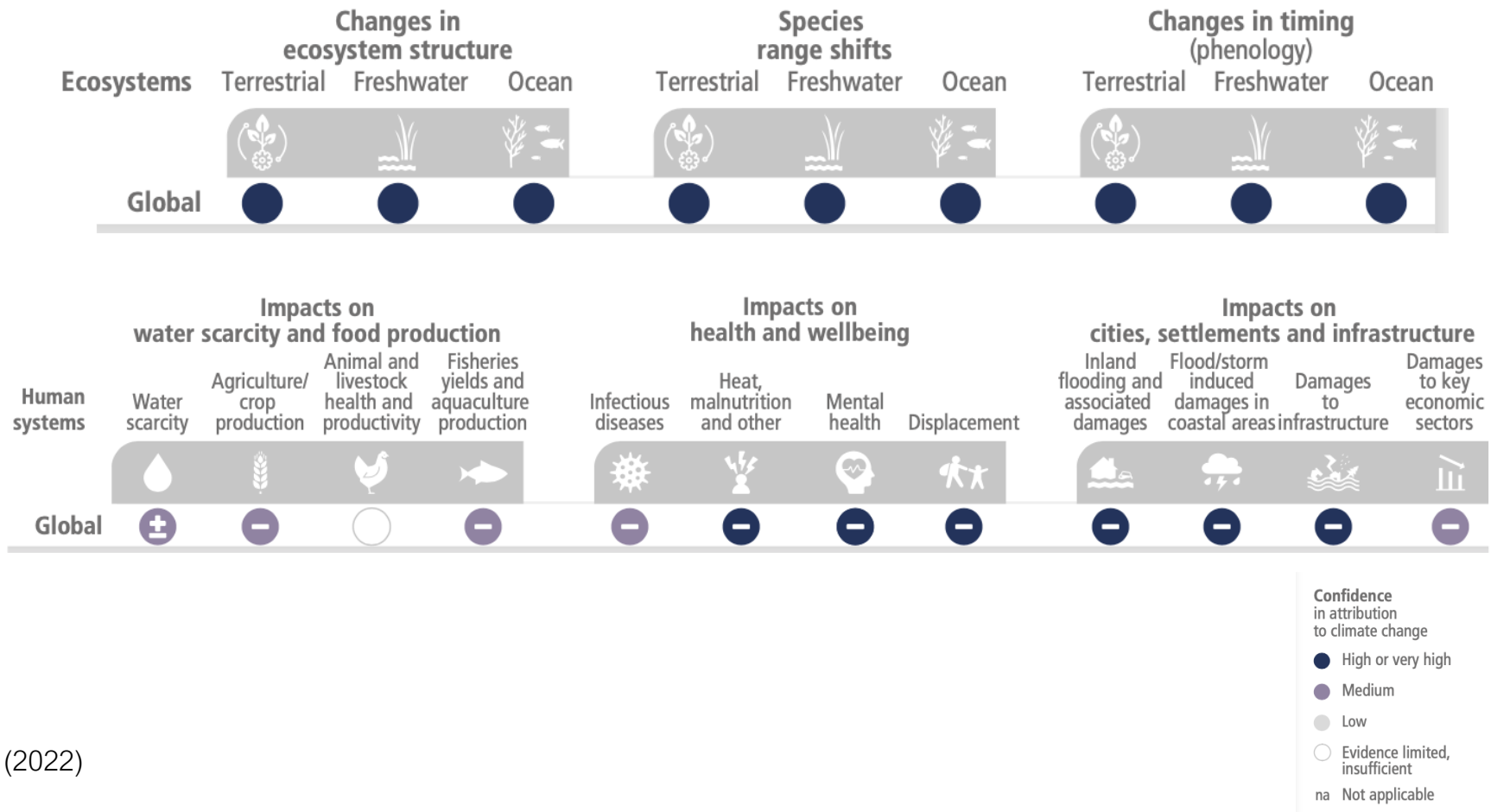
Science Notes and News.

COAL CONSUMPTION AFFECT- ING CLIMATE.

The furnaces of the world are now burning about 2,000,000,000 tons of coal a year. When this is burned, uniting with oxygen, it adds about 7,000,000,000 tons of carbon dioxide to the atmosphere yearly. This tends to make the air a more effective blanket for the earth and to raise its temperature. The effect may be considerable in a few centuries.

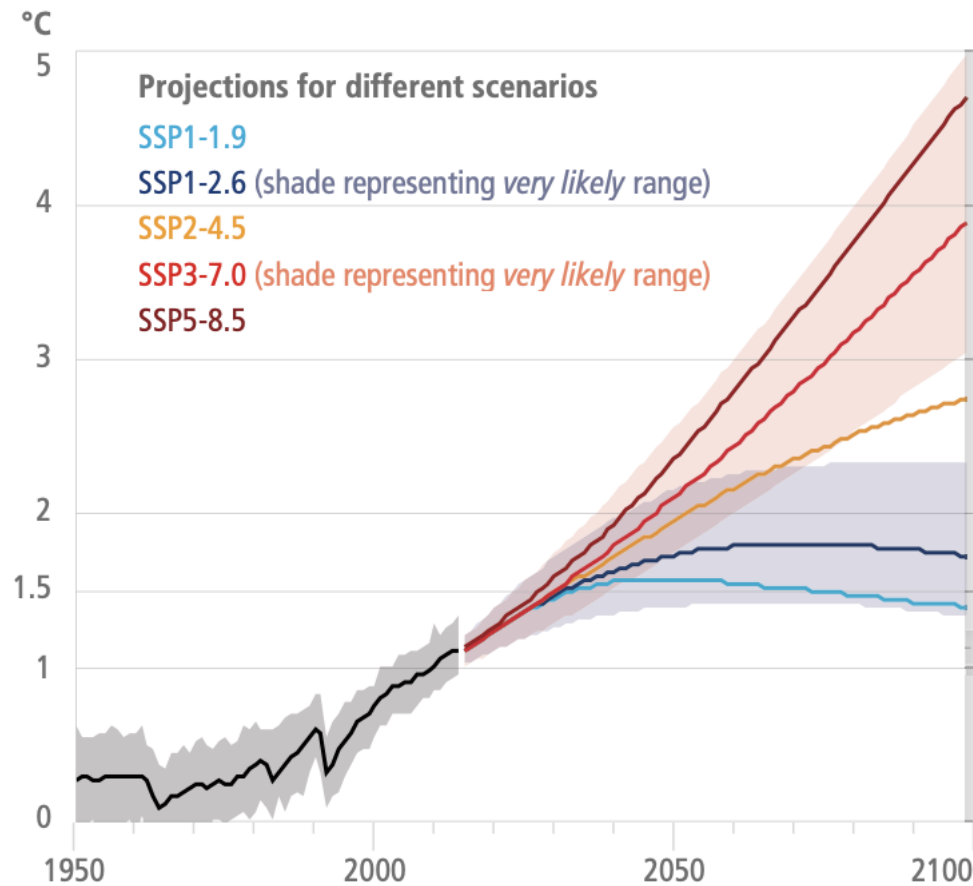


Impacts of climate change are observed in many ecosystems and human systems worldwide



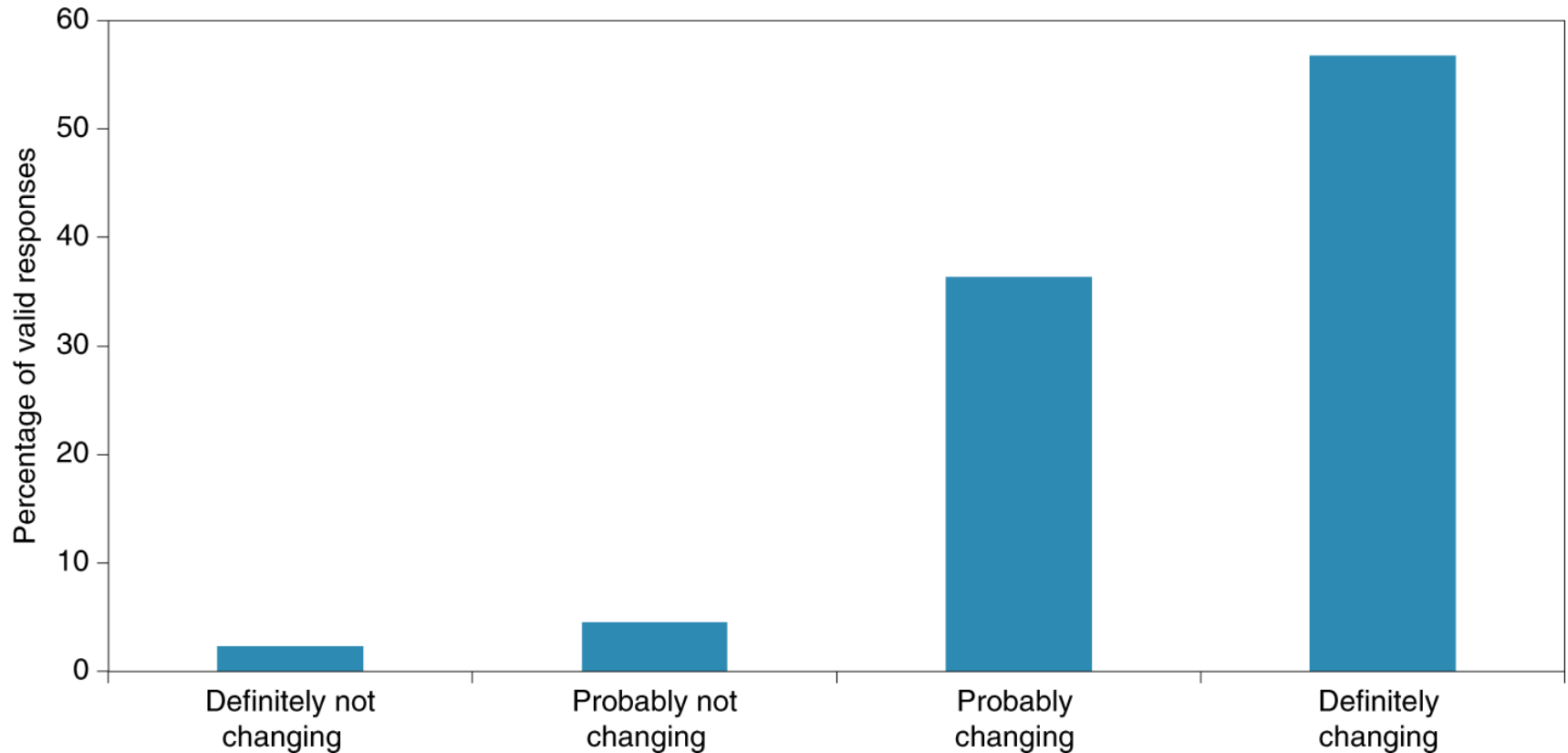
IPCC (2022)

Projected global surface temperature change increase relative to the period 1850-1900



IPCC (2022)

Do you think the world's climate is changing?

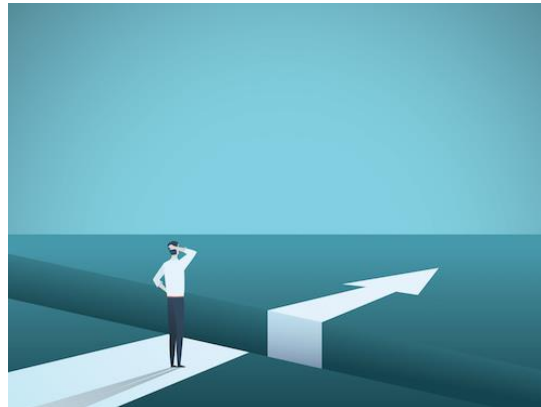


Survey conducted in Austria, Belgium, the Czech Republic, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Lithuania, the Netherlands, Norway, Poland, Portugal, the Russian Federation, Slovenia, Spain, Sweden, Switzerland and the United Kingdom; N = 43,288

Steg (2018) *Nature Climate Change*

The climate paradox

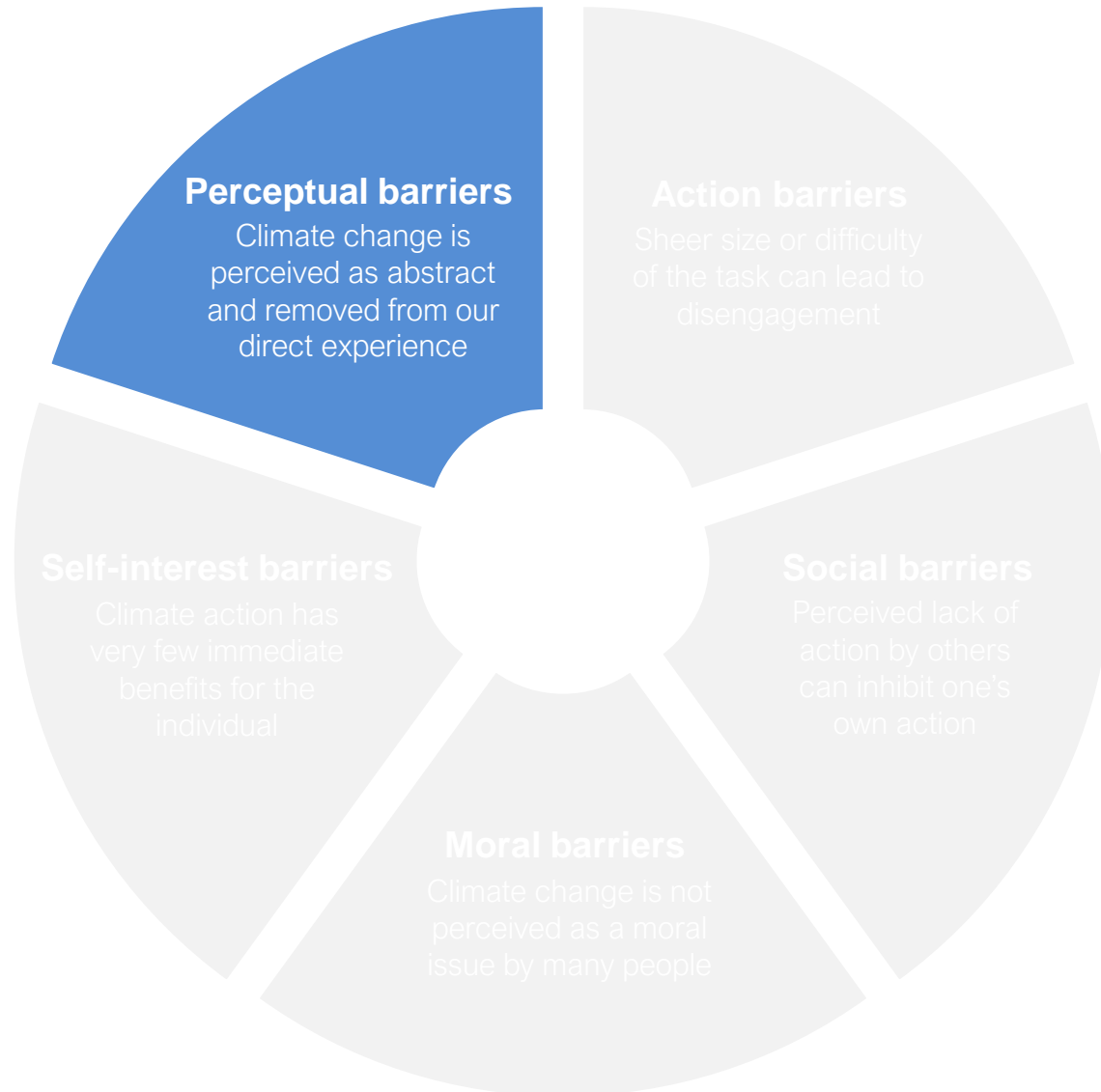
- Scientists **unequivocally agree** on the negative consequences of resource overconsumption and overreliance on fossil energy sources
- **Most laypeople believe** that anthropogenic climate change is real
- **And yet, this knowledge does not translate** into the necessary behavioral changes and actions



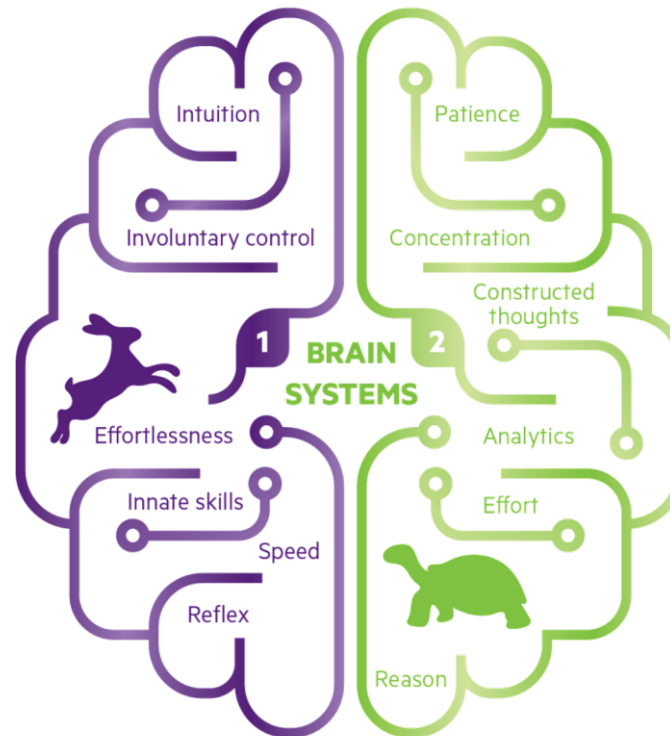
Psychological barriers to climate action



Psychological barriers to climate action



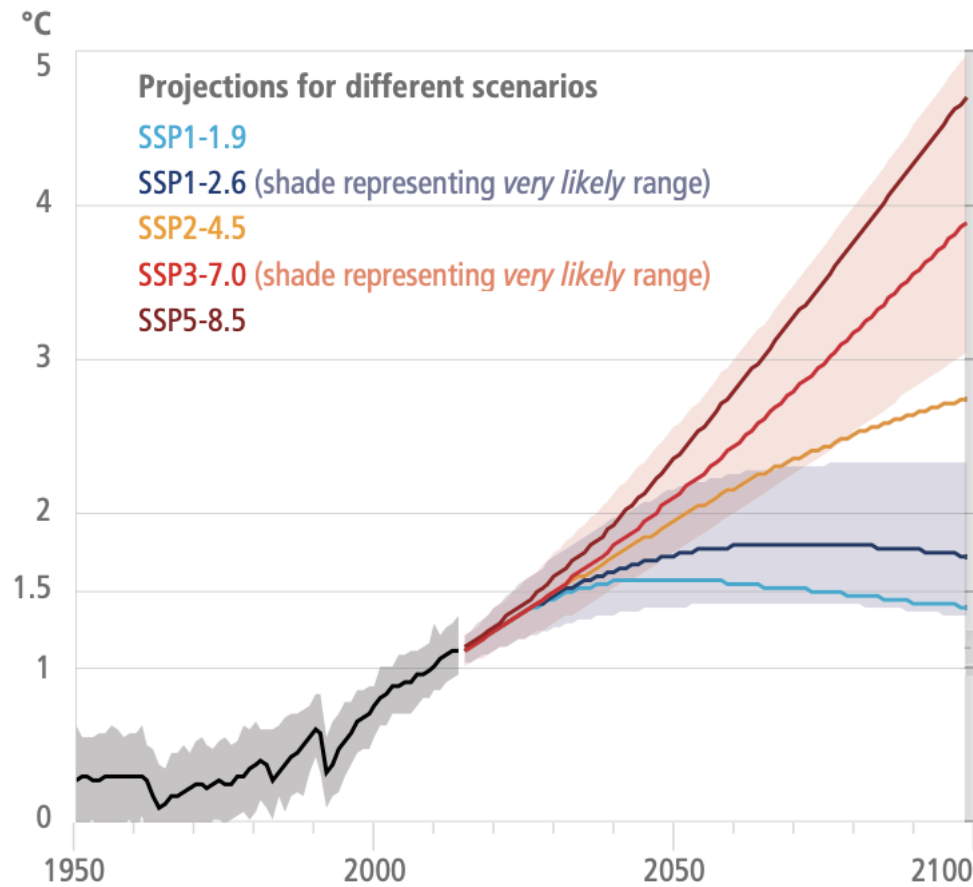
Climate change: A challenge for the human brain



- Fast
- Intuitive
- Linked to affect
- Experience-based

- Slow
- Effortful
- Analytic
- Abstract inputs

Projected global surface temperature change increase relative to the period 1850-1900

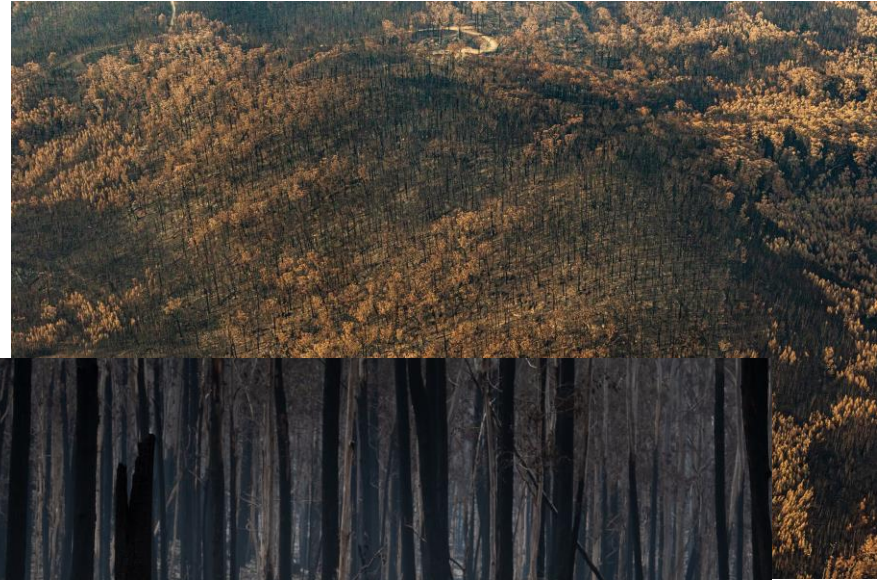


IPCC (2022)



The New York Times

Why These Australia Fires Are Like Nothing We've Seen Before



January 21, 2020

Climate change helped set the table.

Impacts of Climate Change in New York

Climate Change is Already Happening

New York's [ClimAID report](#) (2011, 2014) (leaves DEC website), the [National Climate Assessment](#) (2014) (leaves DEC website), and other research shows that a variety of climate change impacts have already been observed in New York and across the northeastern United States:

Warmer Temperatures

- The annual average temperature statewide has **risen about 2.4°F since 1970**.
- Annual average temperatures have increased in all regions of the state.
- More warming will occur, mostly in the northern parts of New York.

More Rain and Snow

- Overall, average annual precipitation has increased across New York State since 1900.
- New York is getting more rain and snow in the winter and less in the summer.
- Increased precipitation is expected to continue, with more frequent storm events and heavier downpours.

Sea-level Rise

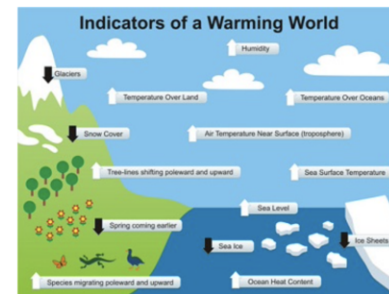
- Sea levels along New York's coast have already **risen more than a foot since 1900**.
- New York's coastal counties are home to more than half of New Yorkers.
- **By 2100, sea levels will be 18 to 50 inches higher than today** along New York's coastlines.
- Sea-level rise is locked in for centuries, by heat-trapping greenhouse gases already in the atmosphere. Continuing or increasing emissions will speed up the rise to higher levels.
- Energy, land use, and infrastructure decisions made now will determine how vulnerable our children and grandchildren will be to rising sea-levels.

Natural Resources

- **Spring begins a week earlier** than it did a few decades ago; in many areas of New York, the first leaf date is more than 8 days earlier and the first bloom date is more than 4 days earlier than in the 1950s.
- Winter snow cover is decreasing.
- Pollinating bees in the northeastern United States **arrive about 10 days earlier** than they did in the 1880s.
- New York's breeding bird and oceanic fish population **ranges have shifted northward** over the last several decades.

Health Risks

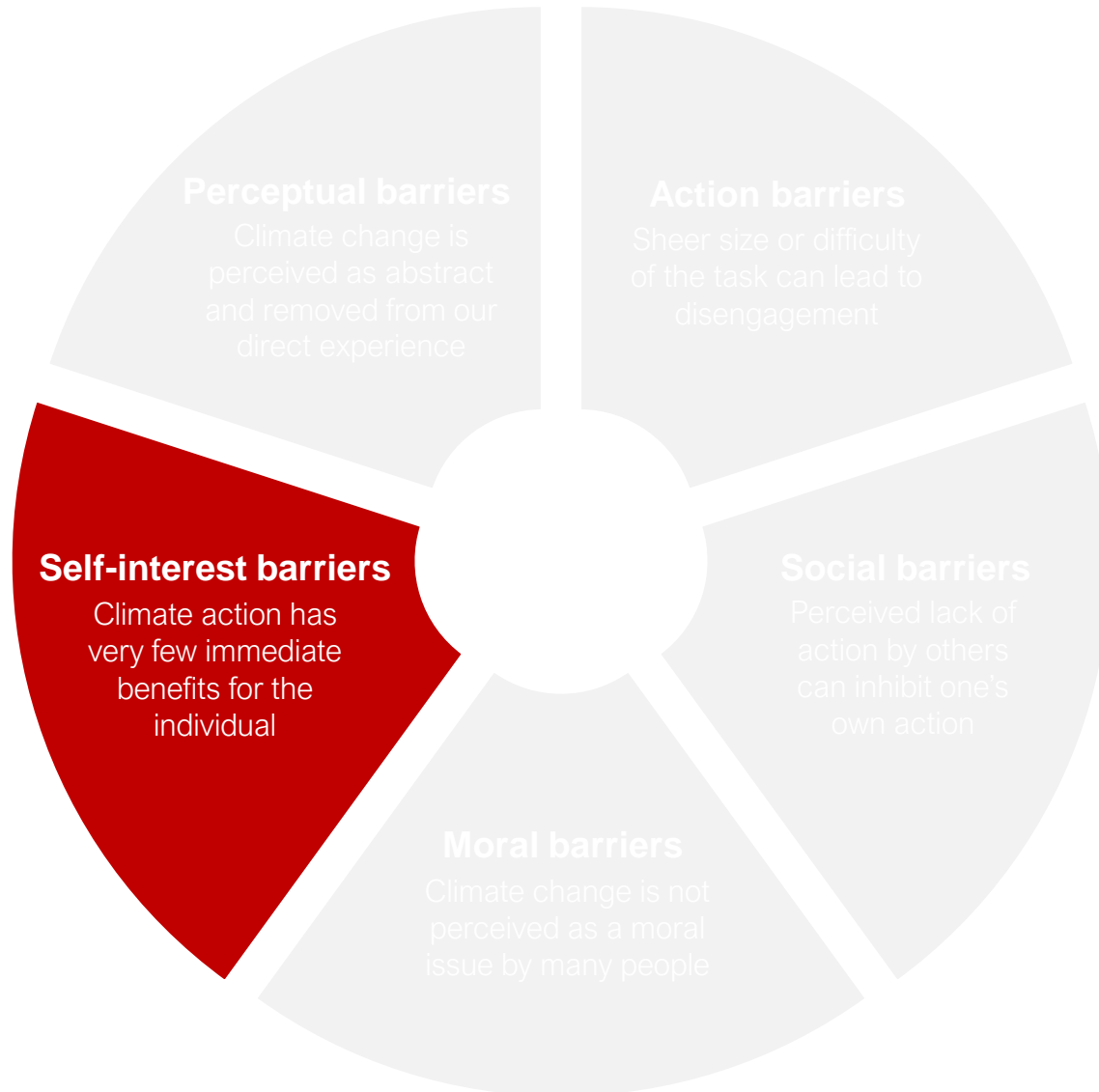
Certain people are more vulnerable to emerging climate change impacts. Climate change raises health risks for people with existing physical or mental illness, children and older adults, those who work outdoors, and those living along the coast or in areas prone to flooding. Climate change can lead to weather events and conditions that are associated with health hazards, such as:



Behavioral Insight #1

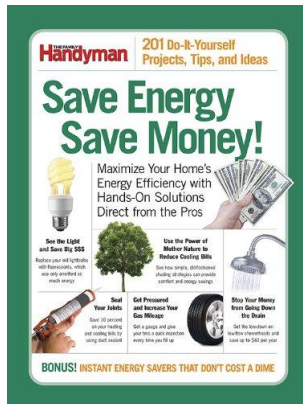
Behaviorally informed climate policy needs to **overcome processing limitations** of the human brain by integrating **directly experienceable aspects** of climate change.

Psychological barriers to climate action

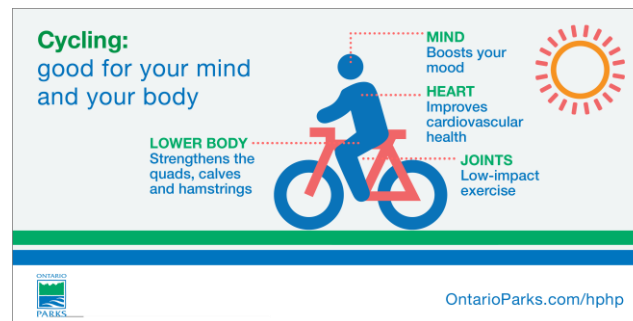


Self-interested pathways to climate action

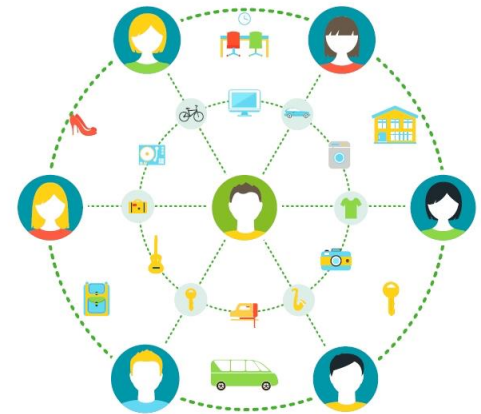
- Humans prioritize actions that have **immediate positive consequences** or **avoid immediate negative consequences**
- Sustainable behavior usually does not yield much **immediately discernible personal benefit** (rather perceived as a reduction in comfort or opportunities)
- Make people aware of the **potential co-benefits** of sustainable behavior



Economic benefits

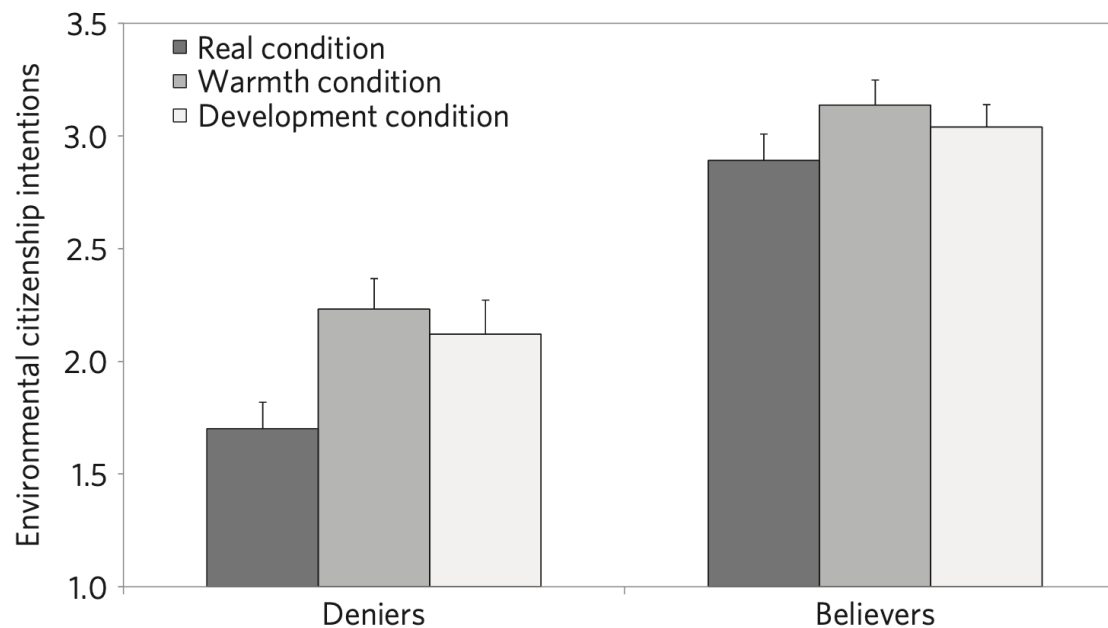


Health benefits



Social benefits

Promoting pro-environmental action in climate change deniers



Bain et al. (2012) *Nature Climate Change*

Self-interested pathways to climate action

2022 GLOBAL 100 / WINTER 2022

The 100 most sustainable corporations of 2022

Which companies earned a spot on Corporate Knights' index of the world's greenest firms?

BY CK STAFF
JANUARY 19, 2022



Germans urged to save energy in order to 'annoy Putin'

Saturday, April 16, 2022

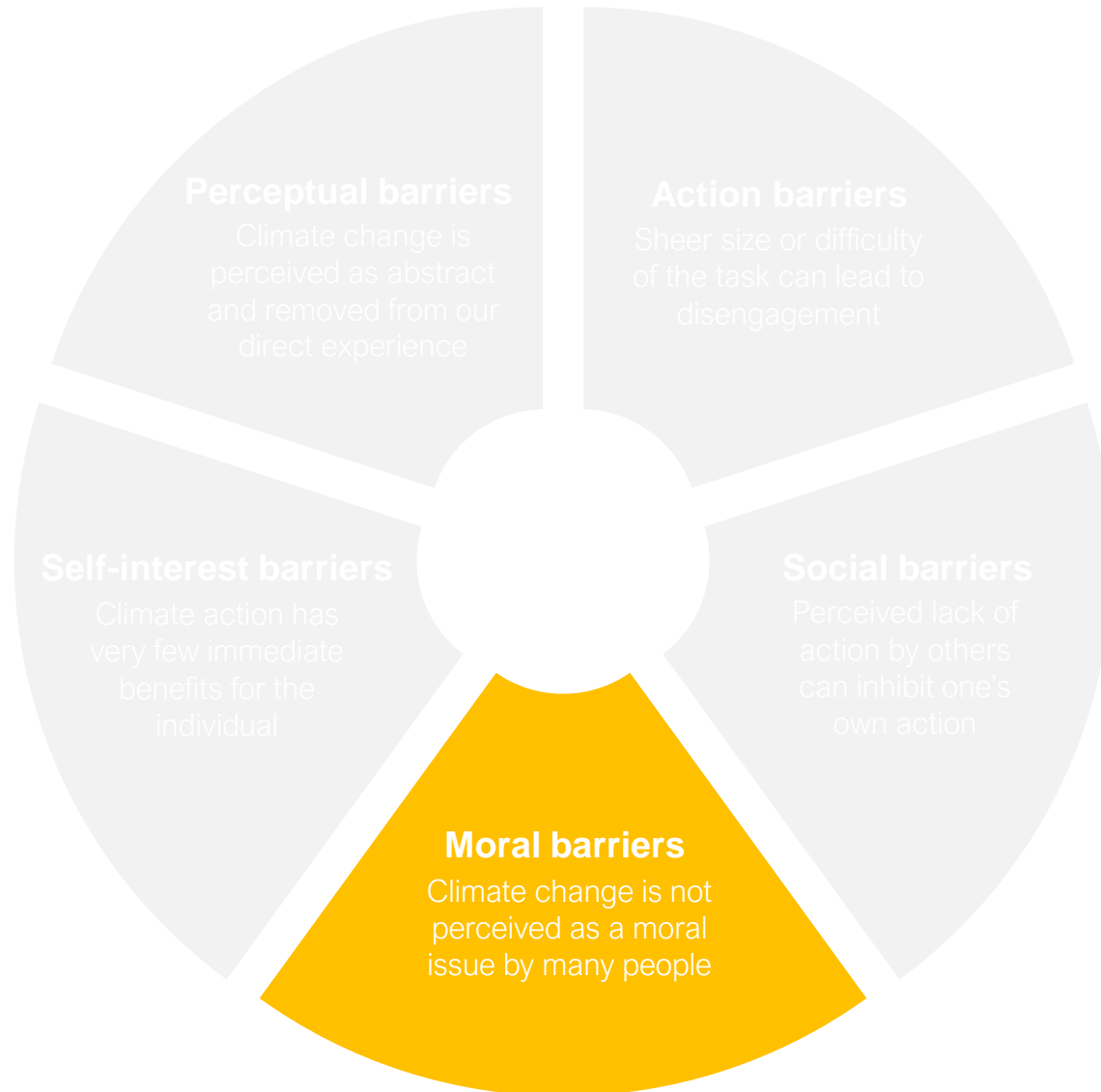
Germany's Vice Chancellor Robert Habeck has urged Germans to save energy in order to “annoy Putin,” as the country seeks to reduce its dependence on Russian gas amidst the war in Ukraine.

“If you can ride your bike or take the train this Easter, that’s good too. This helps you save money and it pisses off Putin,” he added.

Behavioral Insight #2

Behaviorally informed climate policy should consider to what extent **co-benefits** of sustainable action (financial, health, social aspects, status...) are present and communicate accordingly.

Psychological barriers to climate action



Moral pathways to climate action

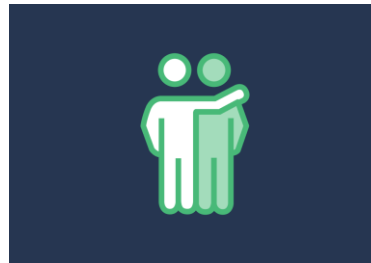
- Human behavior is motivated by considerations about what is the **morally right or wrong thing** to do
- Climate change is not **perceived as a moral issue** by a many people
- Increase the extent to which **climate change resonates** with people's ideas about morality



**Avoiding
harm**



Fairness



Loyalty



**Respecting
authority**



Purity

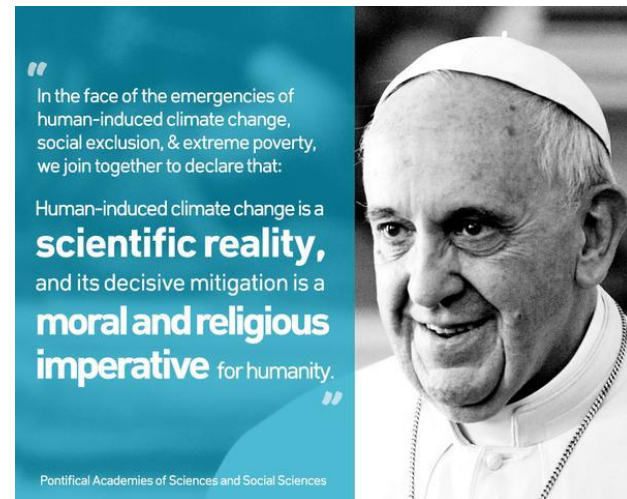
Moral pathways to climate action

Climate change is exacerbating hunger in some of the world's poorest countries. And those most at risk are the least to blame



Just 0.08% of global CO2 emissions are caused by the countries most at risk of hunger crisis.

Image: REUTERS/Kamal Kishore



**Avoiding
harm**

Fairness

Loyalty

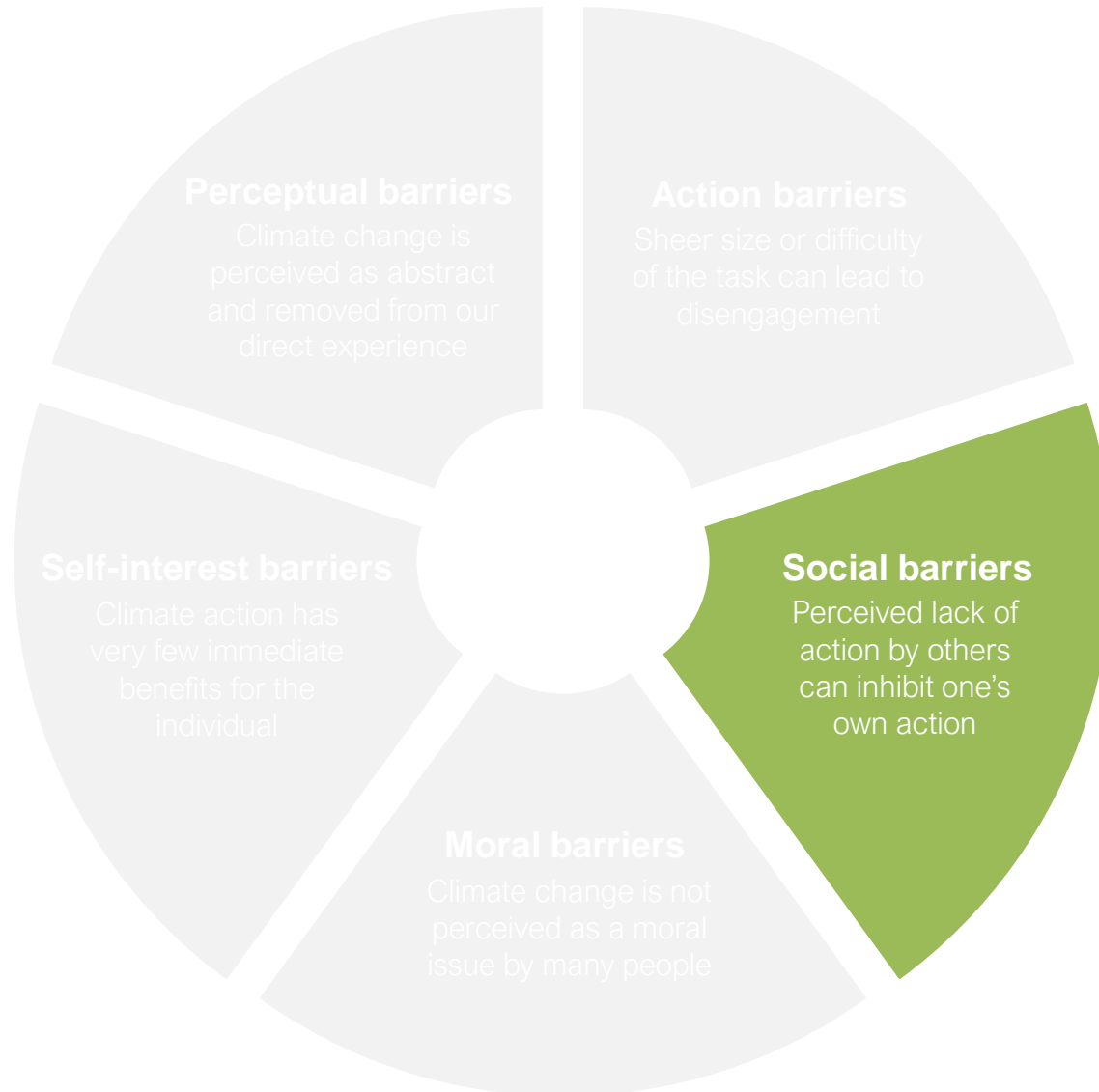
**Respecting
authority**

Purity

Behavioral Insight #3

Behaviorally informed climate policy should integrate the **diversity of moral narratives** that are possible in the context of climate change.

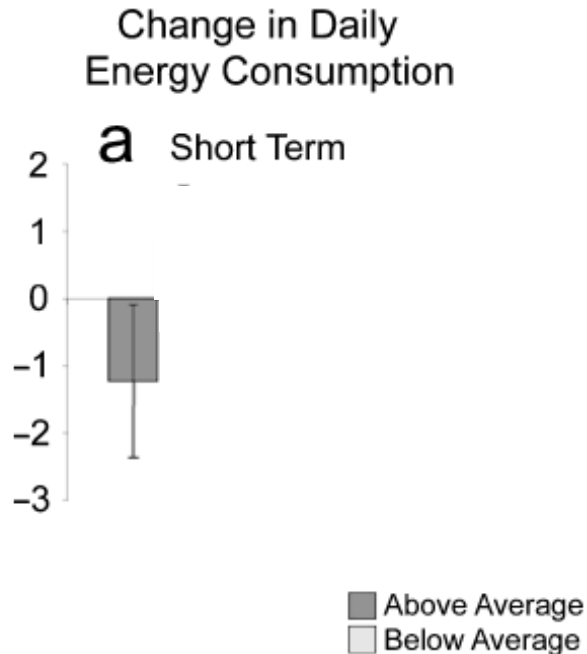
Psychological barriers to climate action



Social pathways to climate action

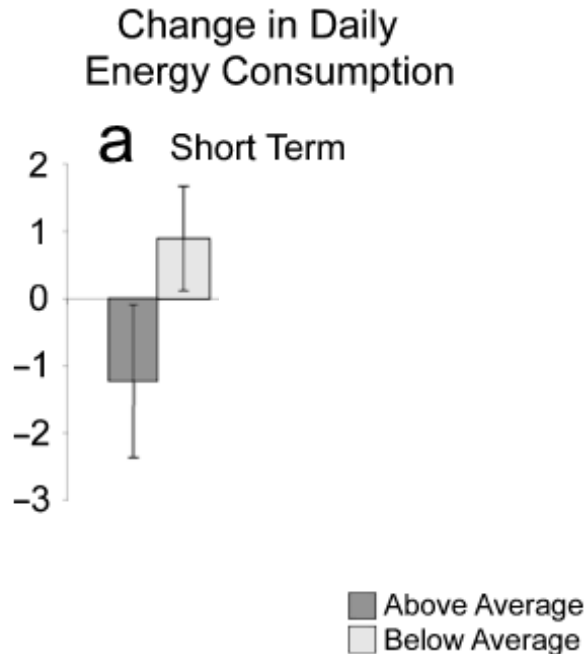
- Humans are a **fundamentally social species**
- We are strongly influenced by our perception of what others are thinking and doing
- Providing **information about other people's sustainable behavior** can be an important lever for action

How much electricity does my neighbor use?



Households that at the beginning consumed **more than average**

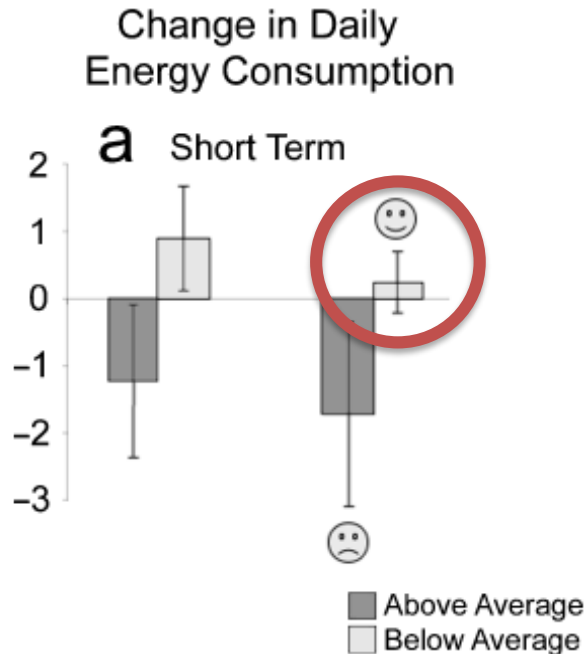
How much electricity does my neighbor use?



Households that at the beginning consumed **more than average**

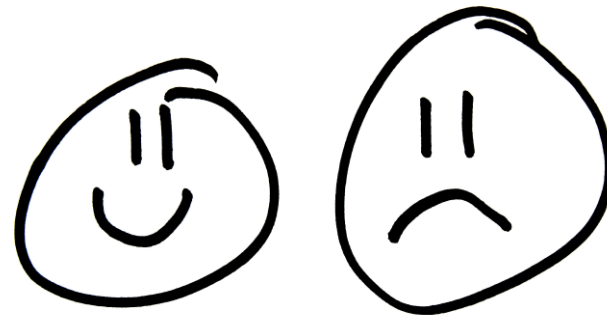
Households that at the beginning consumed **less than average**

How much electricity does my neighbor use?

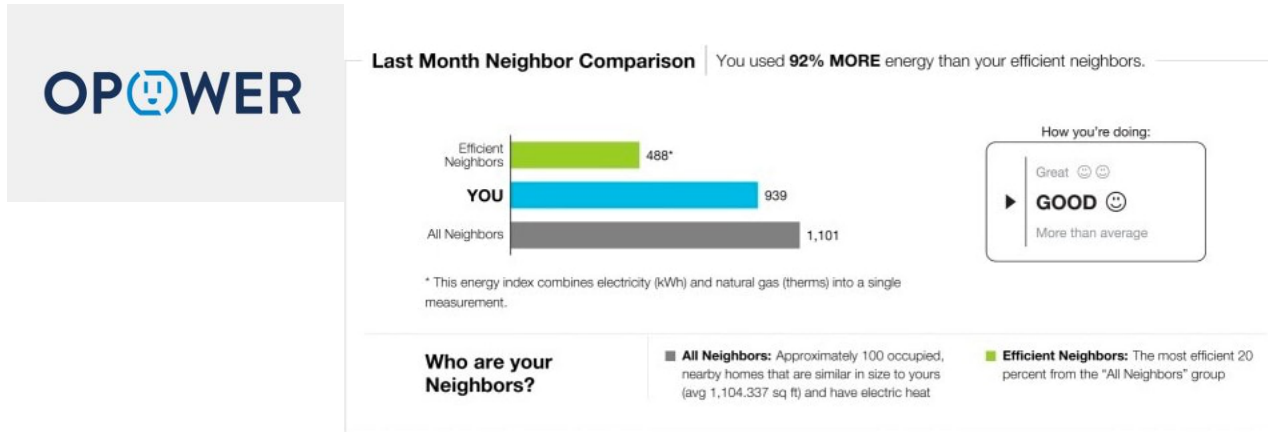


Households that at the beginning consumed **more than average**

Households that at the beginning consumed **less than average and received a smiley**



Social pathways to climate action



OPOWER provide social information about electricity consumption to around 50 million households, allowing to **cut household energy usage by about 2.5%**

Behavioral Insight #4

Behaviorally informed climate policy should systematically **leverage social norms** in communications and interventions.






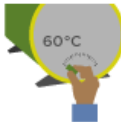








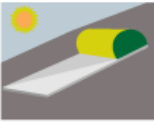
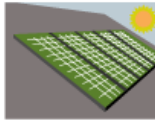
Psychological barriers to climate action




Provide action knowledge


16 ways to save electricity at home

www.switchandsave.co.za
Information provided by the City of Cape Town


 Switch off Switch off appliances at the wall and pull out chargers. This could save you up to 6% of your electricity bill.	 Reduce hours Set your pool pump to run fewer hours. At 10 hours a day, it uses about 11% of your electricity. For winter, 2 - 3 hours is enough for most pools.	 Replace bulbs Replace regular bulbs with energy-saving ones that use 6 times less electricity.	 Adjust shower Install an energy and water efficient showerhead. These use up to 40% less hot water and will save you money on your electricity bill.
 Slow cook Bring food to a boil then place hot pot in an insulation cooker. The retained heat slow-cooks, saving up to 90% on energy.	 Turn down Turn down your geyser temperature to 60°C. This will save you up to 5% on your electricity bill.	 Shower instead Take a shower instead of a bath. You'll save up to 80% in water and use 5 times less electricity than heating a bath of water.	 Use sunshine Dry laundry using sunshine whenever possible, not the tumble dryer. For rainy days, use drying racks indoors.
 Seal gaps Seal or block gaps around windows and doors to keep heat from escaping and cold drafts from breezing in.	 Light up Light a fire instead of using electric heating. Fireplaces retain heat and warm spaces effectively, keeping your cost down and the warmth up.	 Cover up Fit your geyser with a geyser blanket. It prevents heat loss, reducing the cost of electricity needed to keep water hot.	 Wrap it Insulate your hot water pipes. This prevents heat loss, reducing the cost of electricity needed to keep water hot.
 Switch to gas Use gas for cooking. Gas is more efficient than electricity and you have the added bonus of still being able to cook during power outages.	 Insulate Insulate your ceiling. It slows heat loss, making your home up to 5°C warmer in winter, saving up to 10% of your electricity annually.	 Invest in solar Invest in a solar water heater. It uses the sun to heat up your water, saving you 25% or more on your electricity bill.	 Generate your electricity Install a solar photovoltaic system. These generate electricity from the sun's energy.



Western Cape Government



Take Charge
Switch & Save



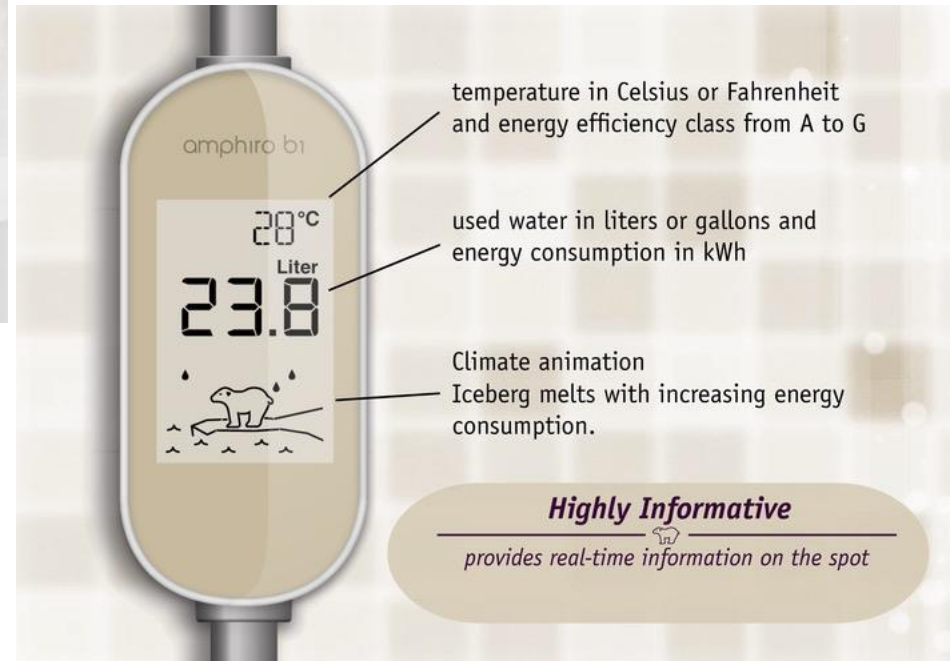
CITY OF CAPE TOWN
ISIXEKO SASEKAPA
STAD KAAPSTAD

Energising the Western Cape
BETTER TOGETHER.

Provide impact knowledge



Provide feedback



Facilitate behavior



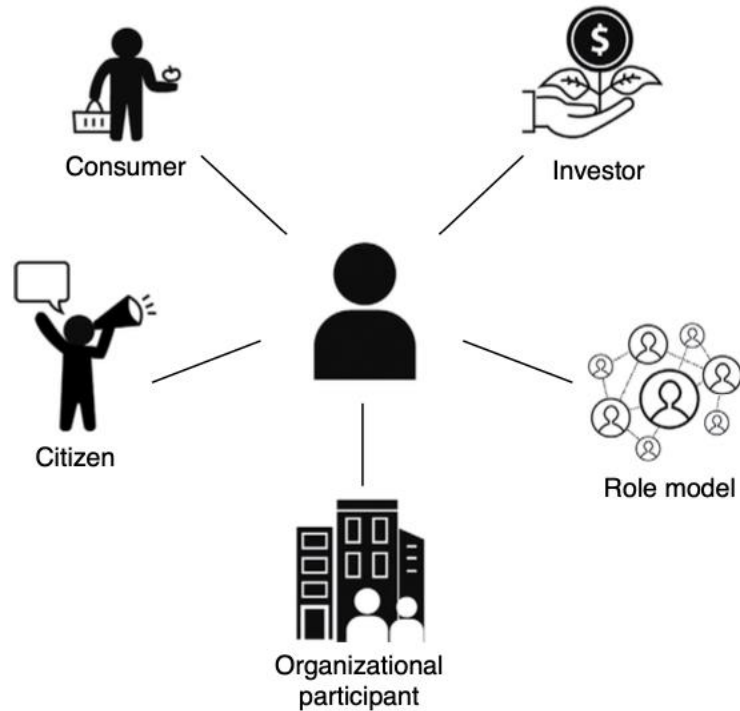
Behavioral Insight #5

Behaviorally informed climate policy should provide targeted information to increase people's capability to show **efficient climate actions**.

Psychological barriers to climate action



What can you do?



What can you do?



- Use low-carbon transportation (fly less, use car less)
- Purchase products that cause few greenhouse gas emissions during production (e.g., animal-free) and transport (e.g., local)
- Engage in behavior supporting a circular economy (e.g., reducing waste, sharing products, refurbishing products)



- Use low-carbon energy sources and carriers (e.g., photovoltaics, heat pumps)
- Adopt energy-efficient appliances and systems
- Implement home insulation



- Vote for political parties with ambitious climate goals
- Protest (e.g., join climate strikes)



- Influence the policies and actions of organizations you belong to

IPCC (2022)



Thank you very much for your attention!
tobias.brosch@unige.ch

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